Listing of the Claims

1. (Original) An apparatus for determining a property of a fluid which flows through a biological tubular structure, the apparatus operable for:

- performing an optical detection step for determining a position of the biological tubular structure,
- performing an optical spectroscopic step for determining of the property of the fluid in a detection volume, the location of the detection volume being determined by the position,

whereby a first numerical aperture is used for performing the optical detection step and a second numerical aperture is used for performing the optical spectroscopic step, and whereby the first numerical aperture is smaller than the second numerical aperture.

2. (Original) The apparatus of claim 1, whereby an objective having a variable numerical aperture is used for performing the optical detection step and for performing the optical spectroscopic step.

3. (Currently Amended) The apparatus of claim 1 ~~or 2~~, whereby the optical detection step is performed by means of an imaging method.

4. (Currently Amended) The apparatus of claims 1~~, 2 or 3~~, whereby Raman spectroscopy is used for performing the optical spectroscopic step.

5. (Currently Amended) The apparatus of claim 1~~, 2 or 3~~, whereby fluorescence spectroscopy is used for performing the optical spectroscopic step.

6. (Currently Amended) The apparatus of claim 1~~, 2 or 3~~, whereby elastic scattering spectroscopy is used for performing the optical spectroscopic step.

7. (Currently Amended) The apparatus of claim 1~~, 2, or 3~~, whereby infrared spectroscopy is used for performing the optical spectroscopic step.

8. (Currently Amended) The apparatus of claim 1~~, 2 or 3~~, whereby photo-acoustic spectroscopy is used for performing the optical spectroscopic step.

9. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims 1~~ to 8~~, whereby the first numerical aperture is below 0.3, in particular below 0.2, preferably 0.1.

10. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims 1~~ to 9~~, whereby the second numerical aperture is above 0.6, in particular above 0.7, preferably between 0.7 and 0.9.

11. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims 1~~ to 10~~, further comprising tracking a movement of the biological tubular structure by imaging of the biological tubular structure with the second numerical aperture.

12. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims 1~~ to 11~~, further comprising optically determining a depth of the biological tubular structure under a surface of the body using the second numerical aperture.

13. (Original) The apparatus of claim 12, further comprising performing a number of imaging steps with the second numerical aperture for scanning along a direction being transversal to the surface of the body in order to determine the depth.

14. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims 1~~ to 13~~, whereby the fluid is blood and the biological tubular structure is a blood vessel.

15. (Currently Amended) The apparatus of ~~anyone of the preceding~~ claims 1~~ to 14~~, whereby the first numerical aperture is used for determining two dimensions of the position and the second numerical aperture is used for determining the third dimension of the position.

16. (Original) A computer program product, in particular a digital storage medium, for controlling of optical detection means and optical spectroscopic means by the steps of:

- controlling of the optical detection means for determining a position of a biological tubular structure through which a fluid flows,
- controlling of the optical spectroscopic means to determine a property of the fluid in a detection volume, a location of the detection volume being determined by the position,

whereby the optical detection means is controlled to perform the position determination with a first numerical aperture and the optical spectroscopic means is controlled to perform the spectroscopic determination of the property using a second numerical aperture, whereby the first numerical aperture is smaller than the second numerical aperture.

17. (Currently Amended) An apparatus for determining a property of a fluid which flows through a biological tubular structure, the apparatus comprising:

- optical detection means ~~(104, 108)~~ for determining a position of the biological tubular structure,
- optical spectroscopic means ~~(102, 108)~~ for determining a property of the fluid in a detection volume ~~(110)~~, the location of the detection volume being determined by the optical detection system,
- optical means ~~(108, 116)~~ for providing a first numerical aperture for the determination of the position by means of the optical detection means and for providing a second numerical aperture for the spectroscopic determination of the property by means of the optical spectroscopic means, the first numerical aperture being smaller than the second numerical aperture.

18. (Original) A method of determining a property of a fluid which flows through a biological tubular structure, the method comprising:

- performing an optical detection step for determining a position of the biological tubular structure,

- performing an optical spectroscopic step for determining of the property of the fluid in a detection volume, the location of the detection volume being determined by the position,

whereby a first numerical aperture is used for performing the optical detection step and a second numerical aperture is used for performing the optical spectroscopic step, and whereby the first numerical aperture is smaller than the second numerical aperture.